

United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,098	02/13/2004	Makoto Taniguchi	118683	5342
25944	7590 07/10/2006		EXAMINER	
OLIFF & BERRIDGE, PLC			MURALIDAR, RICHARD V	
P.O. BOX 19 ALEXANDR	928 IA, VA 22320		ART UNIT	PAPER NUMBER
,			2838	
			DATE MAILED: 07/10/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

				;A
•		Application No.	Applicant(s)	
Office Action Commons		10/777,098	TANIGUCHI, MAKOTO	
	Office Action Summary	Examiner	Art Unit	
		Richard V. Muralidar	2838	
Period fo	The MAILING DATE of this communication app or Reply	pears on the cover sheet with the c	orrespondence address	
WHIC - Exte after - If NC - Failu Any	ORTENED STATUTORY PERIOD FOR REPLY CHEVER IS LONGER, FROM THE MAILING DATE of time may be available under the provisions of 37 CFR 1.13 SIX (6) MONTHS from the mailing date of this communication. It is specified above, the maximum statutory period were to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing ed patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tir will apply and will expire SIX (6) MONTHS from , cause the application to become ABANDONE	N. nely filed the mailing date of this communication. ED (35 U.S.C. § 133).	
Status				
1)⊠	Responsive to communication(s) filed on 31 M	arch 2006.		
2a)⊠	This action is FINAL . 2b) ☐ This	action is non-final.		
3)[Since this application is in condition for allowar	nce except for formal matters, pro	osecution as to the merits is	
	closed in accordance with the practice under E	Ex parte Quayle, 1935 C.D. 11, 4	53 O.G. 213.	
Dispositi	ion of Claims			
4)🖂	Claim(s) 1 and 3-15 is/are pending in the appli	cation.		
	4a) Of the above claim(s) is/are withdraw	wn from consideration.		
5)	Claim(s) is/are allowed.	•		
6)⊠	Claim(s) <u>1 and 3-15</u> is/are rejected.			
·	Claim(s) is/are objected to.			
8)[_]	Claim(s) are subject to restriction and/o	r election requirement.		
Applicati	ion Papers			
9)[The specification is objected to by the Examine	г.		
10)⊠	The drawing(s) filed on 13 February 2004 is/are	e: a)⊠ accepted or b)□ objecte	d to by the Examiner.	
	Applicant may not request that any objection to the	drawing(s) be held in abeyance. Se	e 37 CFR 1.85(a).	
	Replacement drawing sheet(s) including the correct	• • • • • • • • • • • • • • • • • • • •		
11)	The oath or declaration is objected to by the Ex	caminer. Note the attached Office	Action or form PTO-152.	
Priority (ınder 35 U.S.C. § 119			
-	Acknowledgment is made of a claim for foreign ☑ All b) ☐ Some * c) ☐ None of:	priority under 35 U.S.C. § 119(a)-(d) or (f).	
	1. Certified copies of the priority documents	s have been received.		
	2. Certified copies of the priority documents	s have been received in Applicati	ion No	
	3. Copies of the certified copies of the prior	•	ed in this National Stage	
	application from the International Bureau			
* 5	See the attached detailed Office action for a list	of the certified copies not receive	∌d .	
Attachmen	t(s)			
1) Notic	te of References Cited (PTO-892)	4) Interview Summary		
	be of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	Paper No(s)/Mail D	ate Patent Application (PTO-152)	
	rr No(s)/Mail Date	6) Other:		

Art Unit: 2838

FINAL ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

[b] The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

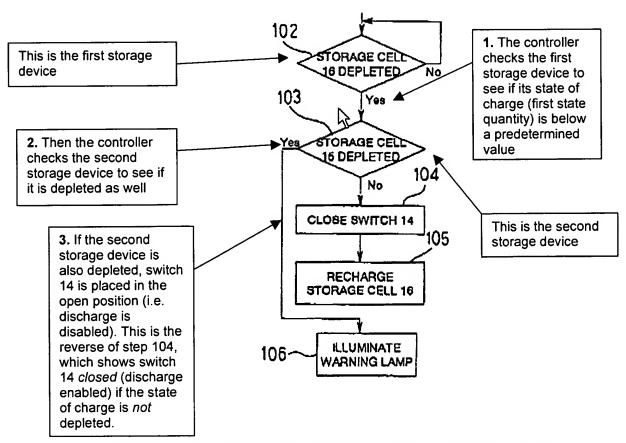
Claims 1-13 are rejected under 35 U.S.C. 102[b] as being anticipated by Nishimura [US-6313546].

With respect to Claim 1, [amended] Nishimura discloses an onboard power supply system [col. 1 lines 7-9] comprising: a power generator [Fig. 1 generator 2]; a first electrical power storage device [Fig. 1 battery 16 is the first battery] charged by the power generator [charged by generator 2 through dc-dc converter 12 and through key switch 6]; a second electrical power storage device [Fig. 1 battery 15 is the second battery]; and a charge and discharge control device [Fig. 3 controller 17 in conjunction with switch 14] for controlling charge and discharge of the second electrical power storage device based on at least one of a first state quantity that indicates a state of charge of the first power storage device [Fig. 1 input 34 to controller 17] and a second state quantity that indicates a state of power generation of the power generator [Fig. 1 input 33 to controller 17 from generator 2], wherein the charge and discharge control device disables the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value [i.e. the second battery is

Application/Control Number: 10/777,098

Art Unit: 2838

turned off when the state of charge of the first battery is below a certain level; referring to the flowchart in Fig. 2 (the portion in question is shown in Drawing 1 below): at step 102, the controller checks the first state quantity (state of charge) of the first battery (storage cell 16). If the first battery is low (below a predetermined value), the second battery (storage cell 15) is checked to see if it's state of charge is good, at step 103. If the second battery is also depleted (following the yes line), switch 14 is opened (the discharge is disabled), and the warning lamp is illuminated. This is the reverse of what is shown at step 104, which says if the second battery is good, then close switch 14 to enable discharge to first battery 16].



Drawing 1: An extract of the flowchart shown by Nishimura in Fig. 2

With respect to <u>Claim 2</u>, [cancelled] Nishimura discloses that the charge and discharge control [Fig. 3 controller 17 in conjunction with switch 14] device controls the charge and discharge of the second electrical power storage device [Fig. 3 storage battery 15] when the first state quantity is equal to or smaller than a predetermined value [Fig. 2 Flowchart, steps 102 to 105; col. 3 lines 52-67 and col. 4 line 1].

With respect to <u>Claim 3</u>, [original] Nishimura discloses a power generation control device [Fig. 1 controller 17], wherein the power generation control device is connected with the power generator [Fig. 1 output 31 connects controller 17 to power generator 2] for controlling the state of power generation of the power generator according to operating conditions of a vehicle [Fig. 2 Flowchart, col. 3 lines 8-16].

With respect to Claim 4, [original] Nishimura discloses that the power generation control device reduces the power generation of the power generator when the vehicle is in an accelerating condition [the voltage regulator in automobile supply systems implicitly reduces the voltage of the power generator (the alternator) when engine rotation increases, otherwise the excessive voltage output of the generator could cause damage to the electrical system. The voltage regulator attempts to maintain the output voltage within an acceptable range regardless of engine rotational speed].

With respect to <u>Claim 5</u>, [original] Nishimura discloses that the charge and discharge control device reduces the discharge [opens switch 14] of the second electrical power storage device when the power generation of the power generator is reduced by the power generation control device [this is implicitly performed by controller 17- in sensing that main battery 4 no longer requires charging, it will reduce the

Art Unit: 2838

generator's output, and also open switch 14 for that same reason, since switch 14 is only closed when additional starting power or recharging is required].

With respect to <u>Claim 6</u>, [original] Nishimura discloses that the discharge of the second electrical power storage device is disabled during a startup of an engine [Fig. 1 col. 3 lines 19-23; the discharge of the second battery 15 is selectively enabled or disabled by controller 17 depending on whether or not the primary battery has sufficient capacity to start the engine].

With respect to <u>Claim 7</u>, [original] Nishimura discloses that the onboard power supply further comprises an electrical device [Fig. 1 low voltage load 3] that is provided with power by at least one of the first electrical power storage device [Fig. 1 battery 16] and the second electrical power storage device [Fig. 1 battery 15], wherein: the first electrical power storage device functions as a main power supply [battery 16 is the primary vehicle battery]; the second electrical power storage device functions as an auxiliary power supply [battery 15 is the secondary or backup battery]; and the second electrical power storage devices is capable of supplying the power to the electrical device whenever required [battery 15 is selectively enabled and disabled by switch 14 to supply power to either of or both high or low voltage loads].

With respect to <u>Claim 8</u>, [original] Nishimura discloses that the onboard power supply further comprises an electrical device [Fig. 1 low voltage load 3], wherein: the first electrical power storage device [Fig. 1 battery 16] functions as a main power supply; the second electrical power storage device functions as an auxiliary power supply [Fig. 1 battery 15]; and the second electrical power storage device supplies

Page 6

Art Unit: 2838

power to the electrical device along with the first electrical power storage device [via high voltage bus 10 and low voltage bus 11, respectively].

With respect to <u>Claim 9</u>, [original] Nishimura discloses that the second electrical power storage device supplies power along with the first electrical power storage device during the power generation of the power generator [Fig. 1 this situation occurs whenever the engine is running i.e. switch 6 is closed and the generator is outputting power to high voltage bus 10 in order to charge both batteries].

With respect to <u>Claim 10</u>, [original] Nishimura discloses that the second electrical power storage device is directly charged by the power generator during the power generation of the power generator [Fig. 1 battery 15 is directly charged by power generator 2].

With respect to <u>Claim 11</u>, [original] Nishimura discloses that the first electrical power storage device is installed in an engine compartment of the vehicle; and the second electrical power storage device is installed in any one of an interior compartment and a trunk compartment of the vehicle [Examiner notes that that placement of the primary and secondary batteries does not impart any additional functionality to the claimed invention; i.e. actual location of either battery would not affect overall functionality].

With respect to <u>Claim 12</u>, [original] Nishimura discloses that the first electrical power storage device and the second electrical power storage device are rated at same volts. Examiner notes that Fig. 1 battery 15 is denoted by a "variable number of batteries" symbol, which indicates to the user that any desirable multiple of secondary

Art Unit: 2838

batteries can be used, including one. Examiner also notes that using two batteries of equal voltage does not significantly impair the functionality of the circuit since the secondary battery will still be capable of its intended purpose- as a backup for the primary battery. The dc-dc converter would be adjusted accordingly.

With respect to <u>Claim 13</u>, [original] Nishimura discloses that the second electrical power storage device is charged by the first electrical power storage device [col. 3 lines 52-67 and col. 4 line 1].

With respect to Claim 14, [new] Nishimura discloses an electric load [Fig. 1, high voltage load 13] that is mounted in a vehicle and connectable to the second electrical power storage device [Fig. 1, through switch 18], wherein a connection of the second electrical power storage device and the electric load is disabled [Fig. 1, by the opening of switch 14 under the control of controller 17] when the first state quantity is smaller than the predetermined value [This is essentially saying the same thing as the amended language of claim 1, because disabling the discharge of the second battery is the same as disabling the second battery from high voltage load 13, since the discharge of the second battery 15 occurs through switch 14 to the high voltage load 13. Therefore, the logic in the flowchart of Fig. 2 applies here as well- the second battery is disabled via the first state quantity by the opening of switch 14. Refer to the arguments of claim 1 above].

With respect to <u>Claim 15</u>, [new] Nishimura discloses an electric load [Fig. 1, high voltage load 13] that is mounted in a vehicle and connectable to the second electrical power storage device [Fig. 1, through switch 18], wherein a connection of the second

Page 8

electrical power storage device and the electric load is disabled [Fig. 1, by the opening of switch 14 under the control of controller 17] when the first state quantity is smaller than the predetermined value [This is essentially saying the same thing as the amended language of claim 1, because disabling the discharge of the second battery is the same as disabling the second battery from high voltage load 13, since the discharge of the second battery 15 occurs through switch 14 to the high voltage load 13. Therefore, the logic in the flowchart of Fig. 2 applies here as well- the second battery is disabled via the first state quantity by the opening of switch 14. Refer to the arguments of claim 1 above].

RESPONSE TO ARGUMENTS

Applicant's arguments filed 3/31/2006 have been fully considered but they are not persuasive, for the following reasons:

Applicant argues that Nishimura fails to disclose each and every feature, specifically "wherein the charge and discharge control device disables the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value." This argument is simply a repeat of the amended claim language and has been fully met for claim 1 above, and is repeated again below:

In plain and simple English, this means: the second battery is turned off when the state of charge of the first battery is below a certain level. Refer to the flowchart in Fig. 2 (Drawing 1 above shows how the logic is implicit): at step 102, the controller checks the first state quantity (state of charge) of the first battery (storage cell 16). If the first battery is low (below a predetermined value), the second battery (storage cell 15) is checked to

see if it's state of charge is good, at step 103. If the second battery is also depleted (following the yes line), switch 14 is opened (the discharge is disabled), and the warning lamp is illuminated. This is the reverse of what is shown at step 104, which says if the second battery is good, then close switch 14 to enable discharge to first battery 16.

Page 9

Applicant argues that Nishimura is silent, specifically concerning "the charge and discharge control device disabling the discharge of the second electrical power storage device when the first state quantity is smaller than a predetermined value." This is the same argument as the first one, and has been addressed above, as well as in Claim 1 and claim 15. As explained above with respect to Claims 1 and 15, and with the aid of Nishimura's Fig. 2 flowchart; controller 17 does in fact disable battery 15 through the opening of switch 14, for the purpose of preventing both batteries from totally dying.

Applicant's arguments have been fully considered and rebutted. Applicant's amended claims and new claims have been considered, and the rejections under 35 U.S.C. 102[b] and 103[a] by Nishimura [US-6313546] stand. Accordingly:

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Application/Control Number: 10/777,098 Page 10

Art Unit: 2838

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

The following reference [Murty et al US 6909201] is cited for its disclosure of an onboard power supply with primary and secondary battery, with generator, dc-dc converter, and multiple loads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard V. Muralidar whose telephone number is 571-272-8933. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl D. Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/777,098 Page 11

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RVM 6/27/2006

> KARL EASTHOM SUPERVISORY PATENT EXAMINER